

From: Special Permits (PHMSA)  
Sent: Wednesday, June 24, 2009 2:17 PM  
To: Nelson, Sherrie (PHMSA)  
Subject: FW: Permit Revision Request attached

SP-14576M  
Modification

-----Original Message-----

From: Beck, Robert [mailto:RBeck@scicomposites.COM]  
Sent: Wednesday, June 24, 2009 2:11 PM  
To: Special Permits (PHMSA)  
Cc: Coursen, John (SCI); Clinkscates, William; Lim, John  
Subject: FW: Permit Revision Request attached

Dear Sir:

Can you please add an additional request to increase the maximum volume to 450 liters so that it conforms to the other permits? We would also like to know where the request is in the approval process.

Best regards,

Bob Beck  
Director of QA and Technical Services  
(909) 376-8101

DEPT OF TRANSPORTATION  
PERMITS

**Naces, Teofilo**

**From:** Naces, Teofilo  
**Sent:** Tuesday, April 07, 2009 4:11 PM  
**To:** 'specialpermits@dot.gov'  
**Cc:** Givens, Andy; Almagro, Russ  
**Subject:** Application for Special Permit 14576 modification  
**Attachments:** DOT-SP 14576 APPLICATION.pdf

Attention: Special Permits, PHH-31

Structural Composites Industries, LLC respectfully apply for a modification of special permit 14576. Attached is our application for DOT-SP 14576 modification.

Contact Information:	
Name:*	Russ Almagro
Organization:	Structural Composites Industries, LLC
Street Address:	325 Enterprise Place
City:	Pomona
State:	California
Country (International Only):	
Zip Code:	91768
E-mail Address:*	RAImagro@scicomposites.com
Telephone Number:*	909-444-2504
Fax Number	

Should you require other information please contact me at 909-444-3114 or email at [tnaces@scicomposites.com](mailto:tnaces@scicomposites.com)  
Thank you Very much.

Sincerely,

Teofilo A. Naces  
Drafting Technician &  
Document Control

4/7/2009

Associate Administrator for Hazardous Materials Safety  
Attention: Special Permits, PHH-31  
Pipeline and Hazardous Materials Safety Administration,  
U.S. Department of Transportation  
400 7th Street, SW.  
Washington, DC  
20590-0001

Attention: Special Permits, PHH-31

04/07/2009

## **Application for Modification to Special Permit 14576**

### **INTRODUCTION**

The holder of SP 14576 respectfully requests that SP 14576 be modified in this respect:  
To remove the specific requirement for minimum water volume of 250 liters.

#### **1. Applicant**

- 1.1 Structural Composites Industries (SCI)  
325 Enterprise Place  
Pomona, CA 91768 USA
- 1.2 The Primary Contact for this application is Russ Almagro, Senior Composite Engineer  
Phone: 909-444-2504  
E-mail: RAlmagro@scicomposites.com
- 1.3 Secondary Contact:  
Friedrich (Ed) Schindler, Director of Operations.  
Phone: 909-444-2512  
E-mail: Eschindler@scicomposites.com

#### **2. Type of Special Permit.**

- 2.1 Structural Composites Industries (SCI) requests this Modification of Special Permit in accordance with 49CFR 107.105, to manufacture, mark and sell a non-specification carbon-fiber reinforced full composite aluminum-lined cylinder (CFFC).

Location of manufacturing: the subject cylinder type will be manufactured at the SCI facilities:  
325 Enterprise Place  
Pomona, CA 91768 USA

and the adjacent SCI facility:  
336 Enterprise Place  
Pomona, CA 91768 USA

### 3. Description of Special Permit Modification Proposal

3.1 Present Special Permit 14576 restricts volume to a minimum of 250 liters. SCI lists below the present phrasing and the proposed phrasing:

**Present:**

**§ 7. SAFETY CONTROL MEASURES:**

(a) PACKAGING – Prescribed packaging are fully wrapped carbon-fiber reinforced aluminum lined cylinders made in conformance with the Basic Requirements for Fully Wrapped Carbon Fiber Reinforced Aluminum Lined Cylinders (DOT-CFFC Fifth Revision), dated March 2007, except as follows:

- (1) CFFC-2 (Size and pressure) – Cylinders made under this special permit are limited to a maximum water volume and service pressure of 315 liters (709 lb) and 517 bar (7500 psi) respectively.
- (2) For cylinders with water volume greater than 250 liters and less than or equal to 315 liters:

**Proposed:**

**§ 7. SAFETY CONTROL MEASURES:**

(a) PACKAGING – Prescribed packaging are fully wrapped carbon-fiber reinforced aluminum lined cylinders made in conformance with the Basic Requirements for Fully Wrapped Carbon Fiber Reinforced Aluminum Lined Cylinders (DOT-CFFC Fifth Revision), dated March 2007, except as follows:

- (1) CFFC-2 (Size and pressure) – Cylinders made under this special permit are limited to a maximum water volume and service pressure of 315 liters (709 lb) and 517 bar (7500 psi) respectively.

**Recap.**

This proposed modification to SP 14576 eliminates the specific requirement of minimum water volume.

**Discussion.**

The present phrasing limits the water volume to a range between 250 liters and 315 liters. SCI presents the following reasons to justify eliminating the minimum volume limit:

- 3.2 Any cylinder with a smaller volume would have a total amount of contained energy that is *less than* the total amount of contained energy in products already approved, qualified, and in service. Less contained energy is less hazardous to the public, and a lower hazard level should be permitted on the basis of being safer than currently authorized gas containers.
- 3.3 Competitors offer gas transportation containers very similar to the SCI container that is the subject of this permit modification request are authorized:
  - 3.3.1 Special Permit 14402 (Grantee: Lincoln Composites): SP 14402 does not limit the minimum container volume. SP 14402 references ISO 11119-3. ISO 11119-3 does not limit the minimum container volume; the only volume limit is for maximum, to 450 Liters.
  - 3.3.2 Special Permit 13173 (Grantee: Dynetek Industries, Ltd.): SP 13173 does not limit the minimum container volume. The only volume limit is for maximum, to 320 Liters.
- 3.4 Military considerations. Currently, SCI has a military supplier as a customer and that customer has a strong interest in a container that otherwise meets the requirements and limitations of SP 14576. The current minimum limit on the water capacity will prevent SCI from accepting an order for the containers for this military use and thereby cause SCI substantial financial harm. The details of that contract proposal are confidential, but can be provided if dollar values are required to justify the amount of financial harm being caused to SCI by the current limit of the minimum volume.

#### **4. Justification of Special Permit Modification Proposal**

##### **4.1 Relevant Shipping and Incident experience of Structural Composites Industries (SCI).**

SCI developed and obtained DOT approval for the world's first commercial composite high-pressure gas cylinder in 1971. Since that introduction, SCI has developed over 400 composite cylinder designs for applications in SCBA, Aircraft escape slide inflation systems, oxygen systems, natural gas fuel containers, and Hydrogen fuel containers for Fuel-cell vehicles

SCI cylinders have also been in spaceflight applications including the space shuttle and orbiting satellites.

SCI has shipped over 2 million composite cylinders to satisfied customers on 5 continents for over 35 years and has achieved an international reputation as a high-quality composite cylinder manufacturer.

No SCI cylinder has failed in use due to design errors or manufacturing flaws.

This cumulative composite cylinder experience uniquely qualifies SCI to design, manufacture, mark, and sell a composite cylinder that is the subject of this application for modification to SP 14576.

##### **4.2 SCI has adequately addressed the risk inherent in the proposed cylinder modification by pointing to the fact that lowering the minimum volume limit will permit cylinders that contain less total energy and are therefore safer than cylinders currently authorized. This ensures that no increase in hazards to the public will result from this modification.**

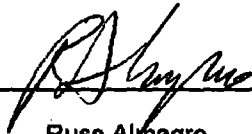
##### **4.3 SCI has noted that it has business competitors that have been granted Special Permits which authorize transport cylinders with lower water volumes than does the SCI permit 14576. SCI seeks a level playing field with its competitors so that SCI can offer equivalent products for business opportunities that are currently only authorized for competitors Lincoln and Dynetek.**

##### **4.4 SCI has noted that a current specific need exists for a military application (US DOD) of a cylinder that would otherwise meet the terms of SP 14576, except that the current minimum volume limit would exclude the SCI cylinder from the needs of this specific use. Exclusion from this business opportunity would cause financial harm to SCI.**

#### **5. Conclusion**

SCI respectfully submits this Application for Modification to Special Permit 14576, and looks forward to answering any communication that may be needed to reach an approval of the Special Permit modification requested herein.

Signed



Russ Almagro  
Senior Composite Engineer  
Structural Composites Industries

Date 04-07-09